

## **Porous Silicon Oxycarbide Integrated Circuit Insulator**

### **Abstract of the Disclosure**

5           An integrated circuit includes at least one porous silicon oxycarbide (SiOC)  
insulator, which provides good mechanical strength and a low dielectric constant  
(e.g.,  $\epsilon_R < 2$ ) for minimizing parasitic capacitance. The insulator provides IC  
isolation, such as between circuit elements, between interconnection lines, between  
circuit elements and interconnection lines, or as a passivation layer overlying both  
10 circuit elements and interconnection lines. The low dielectric constant silicon  
oxycarbide isolation insulator of the present invention reduces the parasitic  
capacitance between circuit nodes. As a result, the silicon oxycarbide isolation  
insulator advantageously provides reduced noise and signal crosstalk between  
circuit nodes, reduced power consumption, faster circuit operation, and minimizes  
15 the risk of potential timing faults.

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